

PHENIX WEEKLY PLANNING

TECHNICAL
SUPPORT
NO. 1



2/17/2011
Don Lynch

This Week:

Restricted Access Monday:

- DC: reinstalled 2 FEM Cards after repairs
- VTX ladder repair attempted;
- RPC adjusted gas, RPC South fully recovered? North still needs work

Restricted Access Today:

- Fixed DC connectors
- MPC, MuTrg, RPC work

Next Access : March 2nd

RPC Factory annual safety recertification in progress

Prep for FoCal prototype installation/safety review

Continuing mechanical, electrical and gas system support for Run 11

Plan for shutdown 2011

Future upgrades support

Next Week

Monday Feb. 21: Presidents Day - Lab Holiday No work

Next: Scheduled Maintenance Access: Wednesday March 2nd

No Plans defined yet

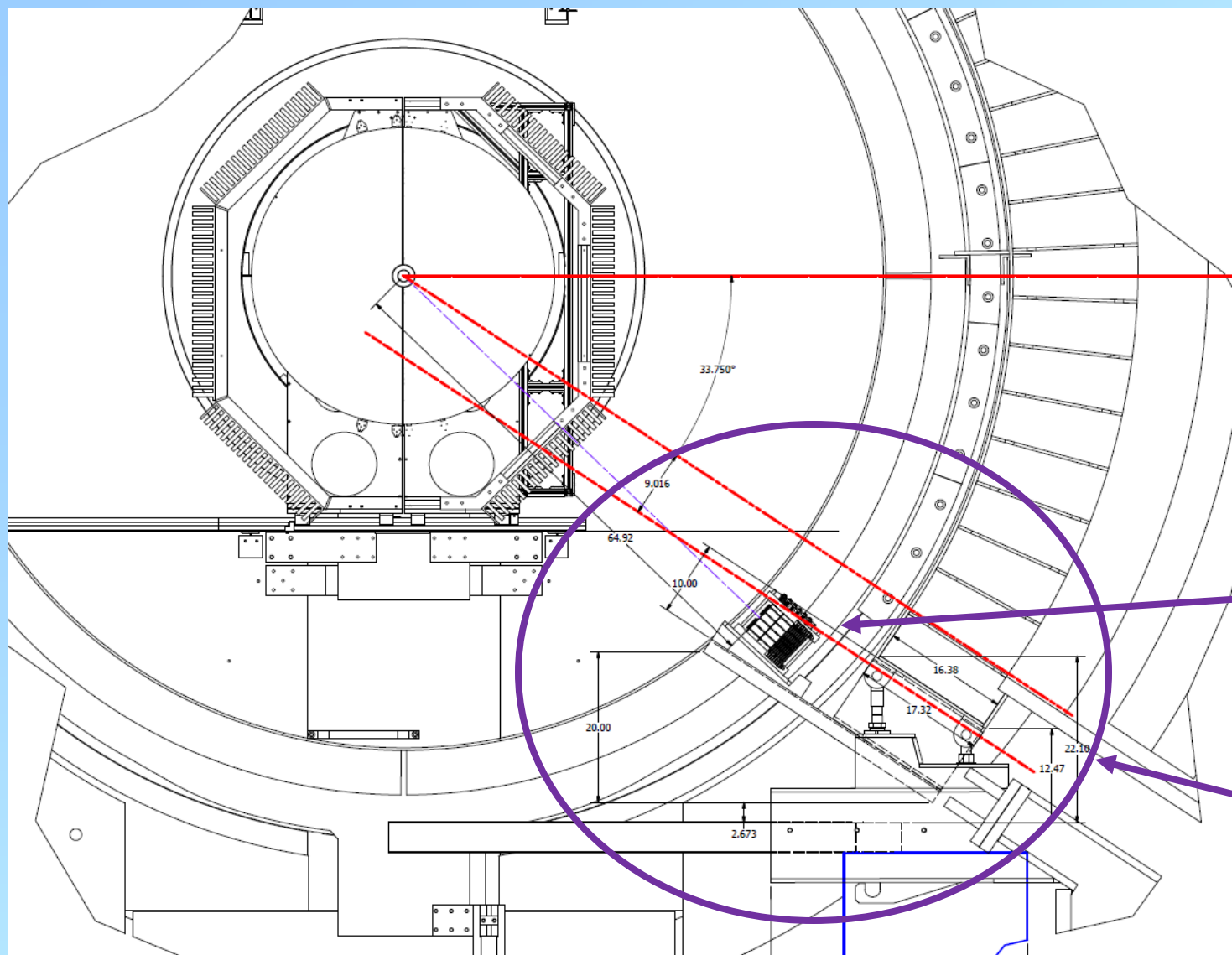
Complete RPC Factory annual safety recertification

Continue Prep for FoCal prototype installation/safety review

Continuing mechanical, electrical and gas system support for Run 11

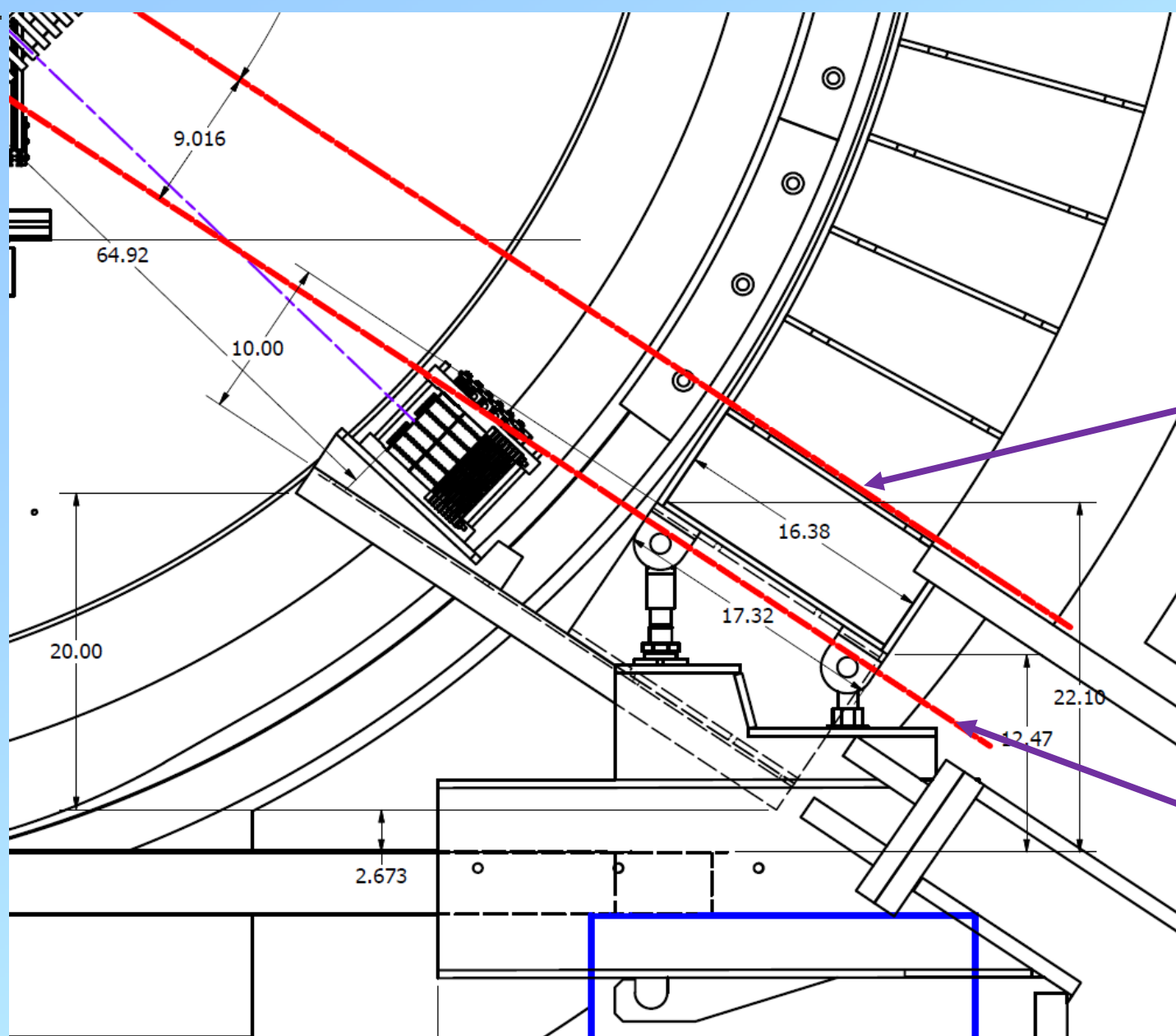
Continue planning for shutdown 2011

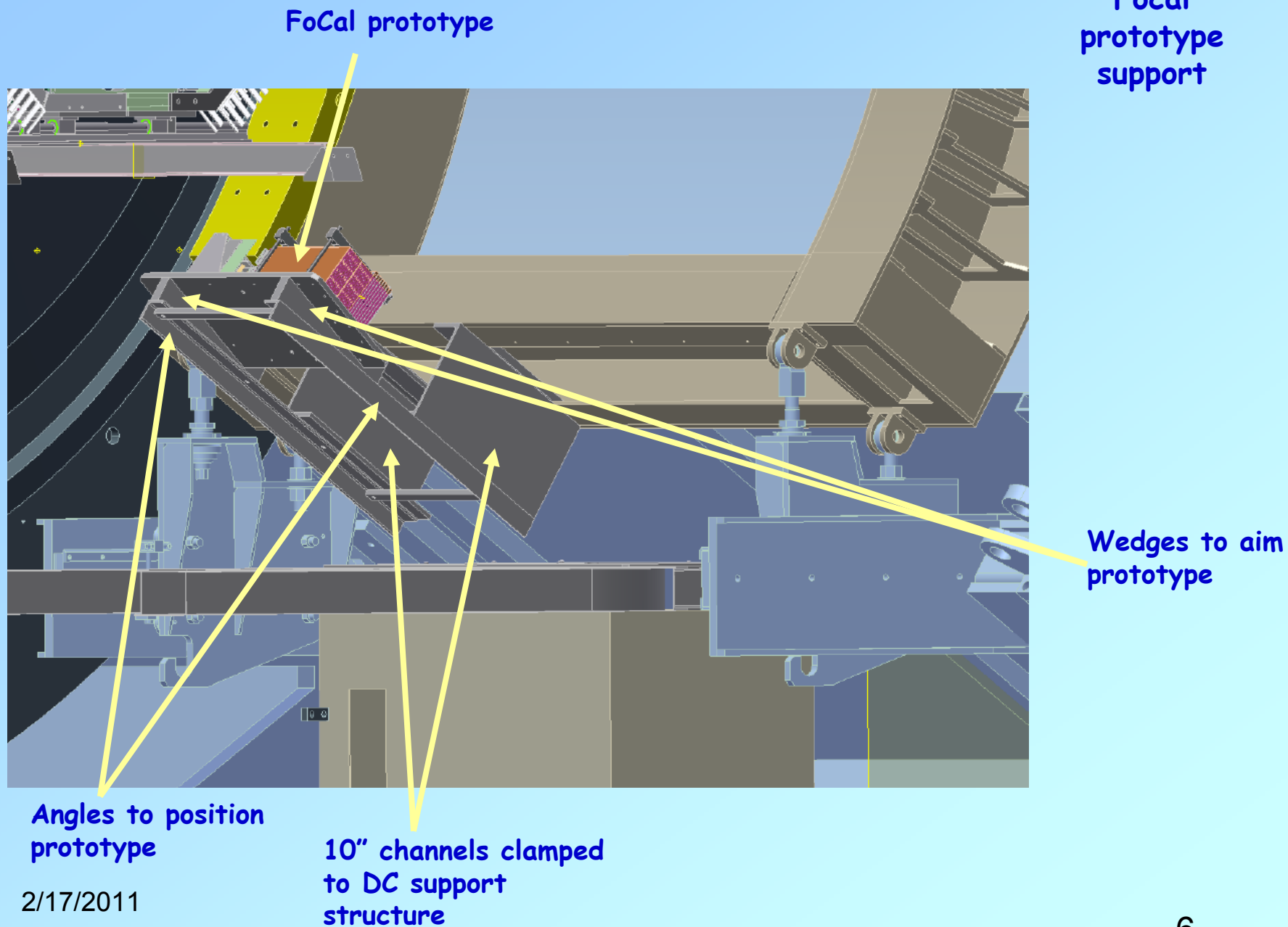
Future upgrades support



Focal prototype

Detail "A"





2/17/2011

Planning For the 2011 Shutdown

- Prep for shutdown 2/1-6/30/2011
 - Define tasks and goals
 - Analysis and design of fixtures, tools and procedures
 - Fabricate/procure tools and fixtures
 - Tests, mockups, prototypes
 - Receive, fabricate, modify, finish installables (bigwheels, tubing, etc.)
 - Review and approval of parts, tools, fixtures and proceures
 - Assembly and QA tests
- Run 11 Ends 6/30/2010
- Shutdown Standard Tasks 7/1-7/21/2010
 - Open wall, disassemble wall, Remove MuID Collars,
 - Move EC to AH, etc.
- Disassemble VTX services 7/11-7/22
- Remove VTX and transport to Chemistry Lab 7/25/2011
- BBC North maintenance 7/22-7/29/2011
- MuTr North Station 1 work 7/25-9/30/2011
 - Install access (scaffold) (1 week)
 - Disconnect Cables, hoses etc (1 week)
 - Remove FEE plates and chambers (1 week)
 - Station 2 Maintenance/upgrade through access opened by station 1 removal (3 weeks concurrent with next task)
 - Clean/install new parts and upgrades (3 weeks, concurrent)
 - Re-install chambers and FEE plates (1 week)
 - Re-cable, re-hose and test (3 weeks)

Planning For the 2011 Shutdown (cont'd)

TECHNICAL SUPPORT NOTES

- VTX maintenance/upgrade and integration of FVTX onto VTX support structure 7/25-9/25/2011
 - Disassemble/repair/upgrade/test/reassemble VTX (3 weeks)
 - Resurvey as necessary (1 week)
 - Install FVTX (3 weeks)
 - VTX/FTX survey and QA tests (2 weeks)
- RPC1 and Absorber upgrades 7/25-10/28/2011
 - Install north absorbers (1 week)
 - Install north RPC1 (3 weeks)
 - Install south absorbers (1 week)
 - Install south RPC1 (3 weeks)
- Install VTX&FVTX (2 weeks) 9/26-10/7/2011
- Undefined detector subsystem maintenance and repairs 7/25-10/7/2011
- Prep for EC roll in 10/3-10/7/2011
- Roll in EC 10/10/2011
- Prep IR for run 10/10-10/17/2010
- VTX, FVTX and RPC1 Services and commissioning 9/16-10/31/201
- Pink/Blue/White sheets 10/17-10/31/201
- Run 12 cooldown 11/1/2011

Removing, Repairing and Replacing Muon Tracking Station-1 (North)

Purpose - to install new coupling caps and terminators for anodes

- reduces cross-talk problems by about 1/3
- fixes any remaining HV problems
- does not address large pulses, which are real source of problem

Steps:

- Preparation of needed parts & procedures
- Documentation of present connections
- Disconnect cables, water cooling, etc.
- Remove FEE plate & chambers; take chambers to lab
- Clean & install new caps and terminators
- Reinstall chambers & FEE plates
- Re-cable & test

Largest Issues:

- manpower - physicists, techs and expert soldering, students?
- fitting into shutdown - est. ~9-11 weeks de-cabled (includes 3-4 wks recable/test)
- replacing caps is difficult, even on bench
- correct re-cabling & restore low noise; testing

Other Muon Tracking worries:

- 2 bad HV chans on station-2; will there be more with caps still there?
- sta-3 cross-talk or anode termination not addressed here

UPDATE
VACUUM LIFTER
FOR
STATION 1
MAINTENANCE



Anver 36 Parameter Rd. Hudson, MA 01749

1-800-654-3500

www.anver.com

Lifter Model- ET100M8-MR-SP

Serial Number- 974808

2/17/2011

Replace Vacuum Cups

Old Vacuum cups are warped and cracked



Replace Wire Reinforced Hose

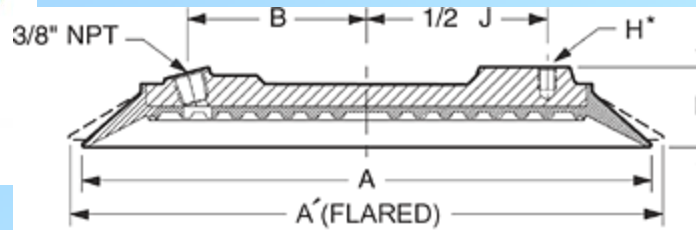
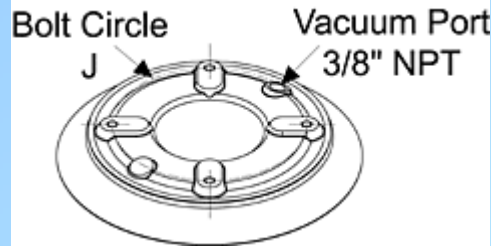
Old hose has a couple of pinched points



Cost and Specifications



© ANVER Corp. www.anver.com Part #: VC95Q



\$136.00 ea

(8)= \$1088.00

In stock as of 2/8/11
(Standard Shipping)



© ANVER Corp. www.anver.com Part #: HS45

Clear PVC Steel, Reinforced
3/8 I.D.

\$1.10 per ft

(30ft)= \$33.00

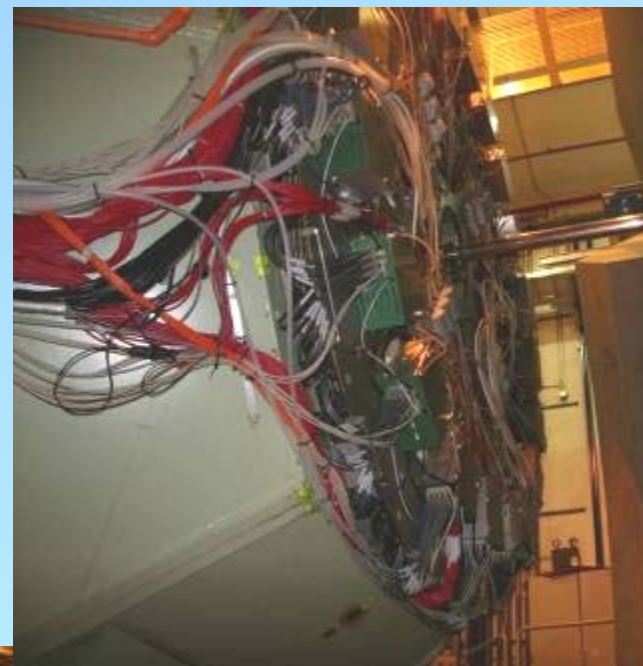
In stock as of 2/8/11
(Standard Shipping)

Approval Instructions as per Mike Gaffney

1. Calculate dynamics of load
 - A. Center of Gravity
2. Critical lift form
 - A. Weights to be lifted
3. Work procedure
 - A. All equipment rated and tested
 1. Test load
4. Contact John Hynan (5456; jd@bnl.gov)
 - A. Inspection of fixture (Date on inspection tag 1/30/09, signed by Hynan)

Things to Consider

1. Understanding of the lift
 - A. Rotation?
 - B. Safe area to place the load
2. Protection of the beam pipe
3. Riggers to do the lifting? (as mentioned by Mike Gaffney)



2/17/2011

Repair of MuTr North Sta-1 Plan - MJL

2010 Building Maintenance Issues

TECHNICAL SUPPORT

- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall, over door between control room and elect. ass'y room, southeast corner of IR and laser room.
- General maintenance for Trailer Offices (in progress)
-Repair replace floor tiling as needed
- Flooding in AH/ Driveway
- New connection

Nothing New This Week



PHENIX Procedure Review Current Status:

147 Procedures Identified

87 Made Inactive (not currently in use, will require revision to re- activate if and when necessary, available for reference purposes)

9 CAD procedures relevant to PHENIX are up to date and available on the CAD web site

Nothing New This Week

Procedures (never previously formalized) (3 are ready for formalization and will be addressed during next few months.

Web retrieval of latest procedures now available from PHENIX Internal:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_procedures.htm

1. RPC Factory annual safety review
 - a) All procedures reviewed and found to be up to date requiring no revisions
 - b) Annual RPC Factory safety system blue sheet testing complete (?)
 - c) Safety walkthru needed, schedule TBD
2. FoCal Prototype safety review
 - a) Documents prepared and submitted for review
 - b) Installation procedure and work permit in progress
 - c) Assembly of prototype and design of installation/support structure in progress
 - d) Expect to install during a maintenance access period sometime in March

3. From George Goode (ALD ESH)

It appears that the weather is finally going to give us break, so the message this week is not on slips/falls, but on Traffic Safety. As you know, all employees, visitors, and guests are expected to follow NYS Traffic Law while driving on site. That means:

- Strict adherence to speed limit

- Full Stops at STOP signs

- Courtesy to others

- Seat belt use

- No cell phone or "Direct Connect" use while driving - Pull over to talk.

We've been put on notice from DOE that they have observed many (80%!!) drivers rolling through or just plain running stop signs. I have noticed similar results.

Are you leading by example and communicating your expectations for full compliance with Traffic Safety rules?

Drive safely...it's the most dangerous thing we do!

4. C-AD Worker Safety Observations dated 01/19/20

- a) **Observations:** In the Experimental Hall, a 55-gallon drum of coolant makeup is stored on top of shield block.

Action: Please ensure the 55 gallon makeup drum is relocated off the shield block and located in a safe location.

- b) **Observations:** There are blocked circuit breakers and horizontal work surfaces are cluttered with materials of all types. A 208 V box and control button in the Experimental Hall required a level of PPE to operate that seemed excessive. The Office Modular has a blocked breaker near a broken refrigerator and one electronics work area poorly equipped with lighting.

Action: Please ensure circuit breakers are not blocked and clutter is removed from horizontal surfaces. Please replace broken refrigerator and ensure lighting is sufficient for precise electronics work in the Office Modular.

5. Internal BNL Environmental, Safety Audits Feb. 14 to 25

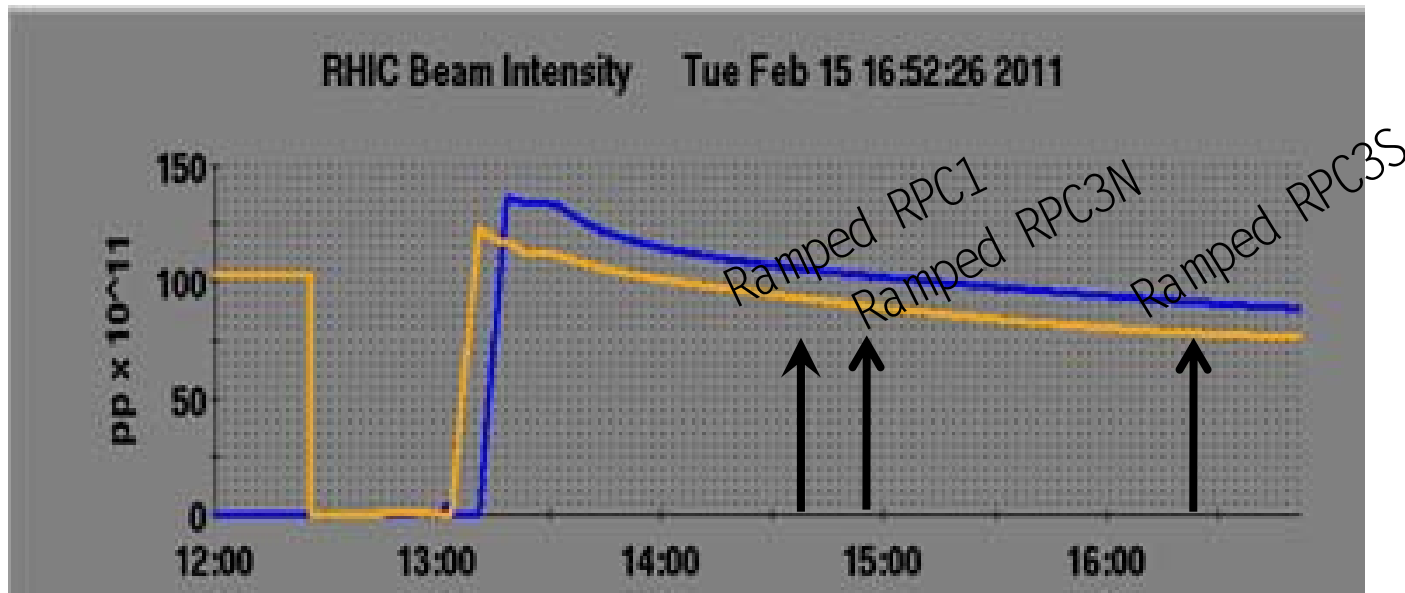
What you should know:

- BNL has an ESSH Policy (it is accessible on SBMS)
- All should know the specific hazards we have in our work and how we deal with them (PHENIX Awareness training, CAD access training, daily informal planning discussions, weekly planning meetings, design and safety reviews, formal procedures and enhanced work permits, each as appropriate to the specific task.
- All should know how to report an emergency (2222 or 911 from a lab phone, 631-344-2222 from a cell phone or off site.)

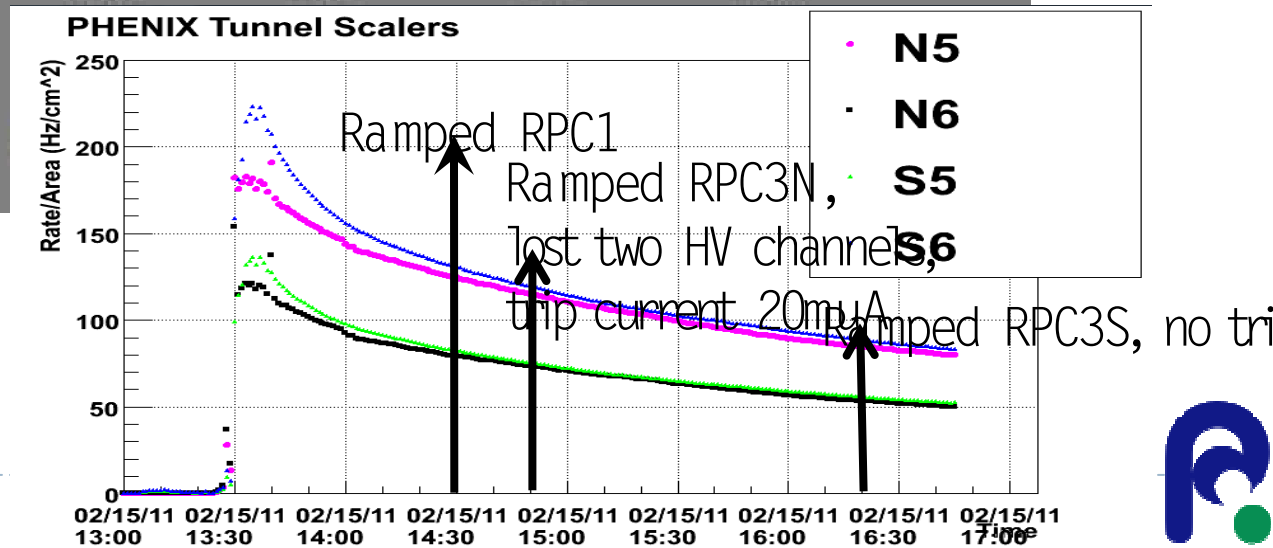
RPC Background conditions

Ralf Seidl, Slides mostly by
Martin Leitgab, Ihn Jea Choi and Youg Jin Kim

Problem: Large Backgrounds from (mostly) incoming beams don't allow us to operate RPCs early in the store

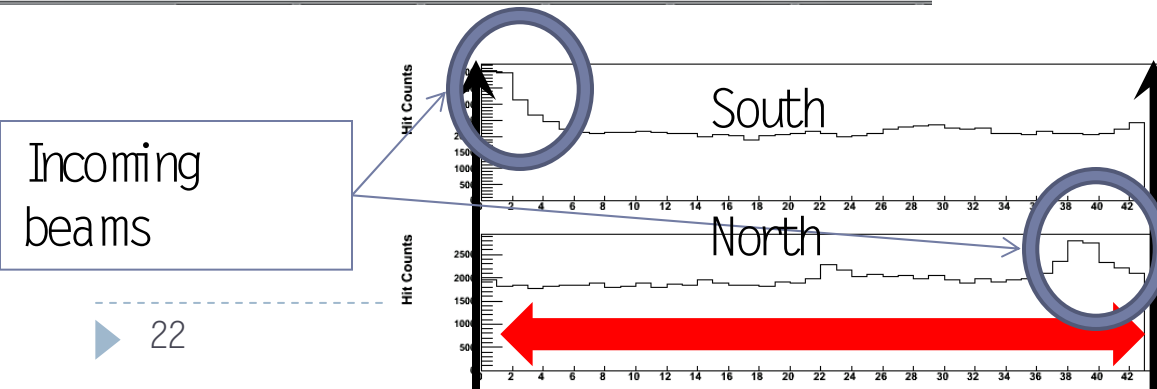
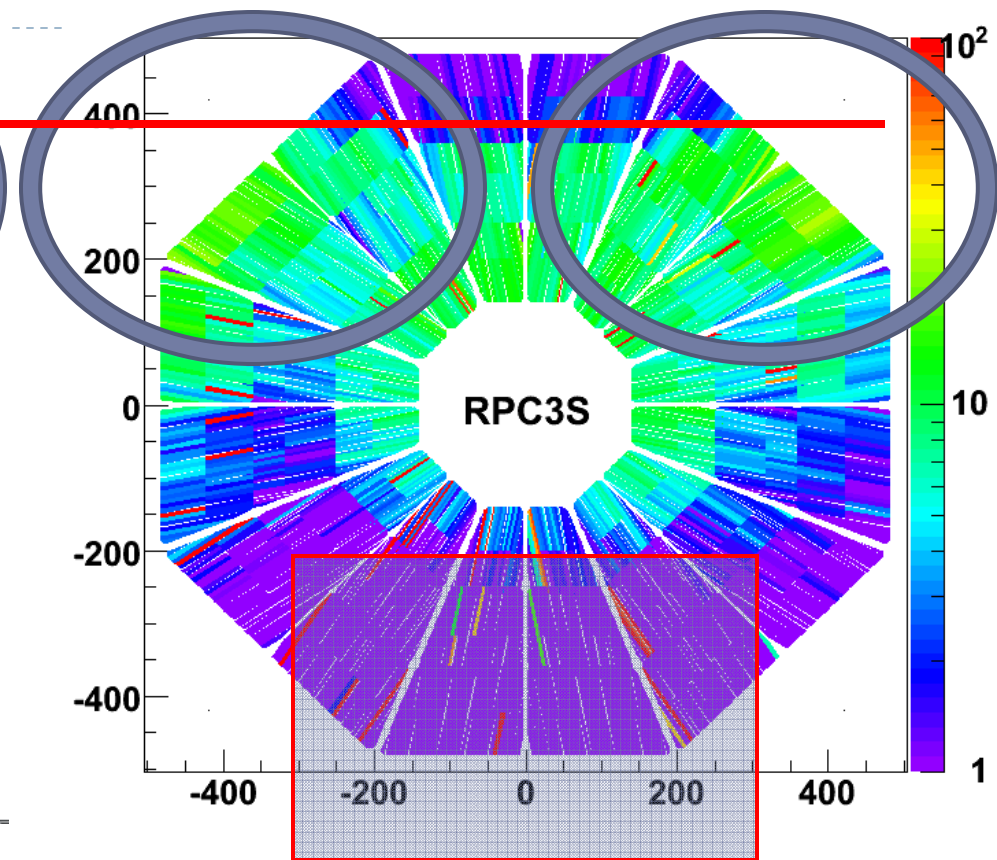
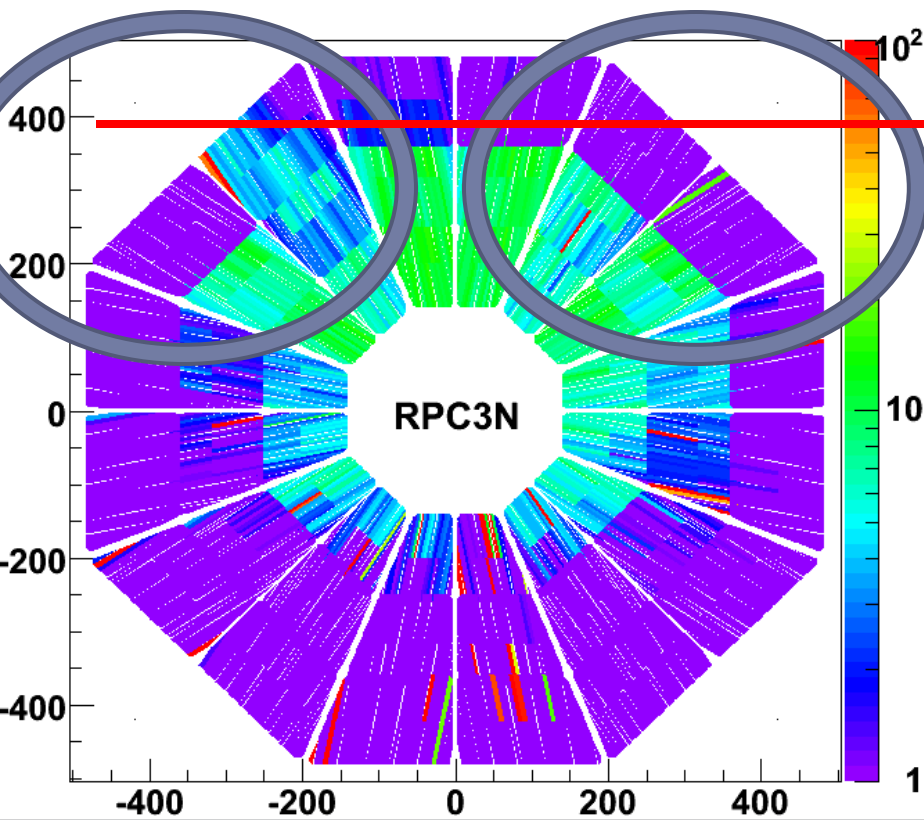


- RHIC store 15172.



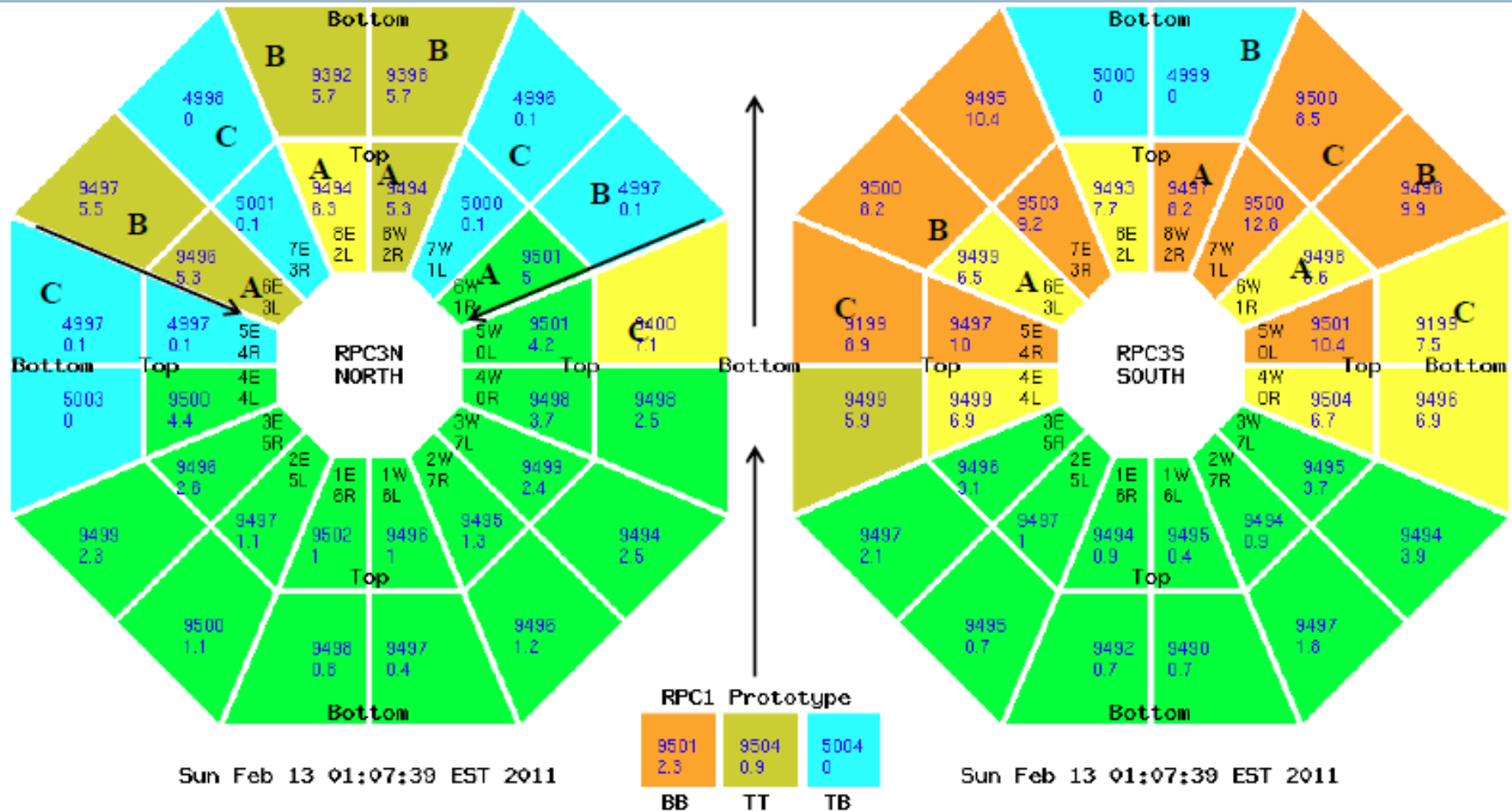
Hit Rates Tunnel Scalers vs RPC Rates

- RHIC store 15172. run 331165. 280k clock trigger events.



Clear Indication of Tunnel roof and Mezzanine shielding
Background mostly in upper corners of tunnel –
is it a shielding issue?

HV Dark currents



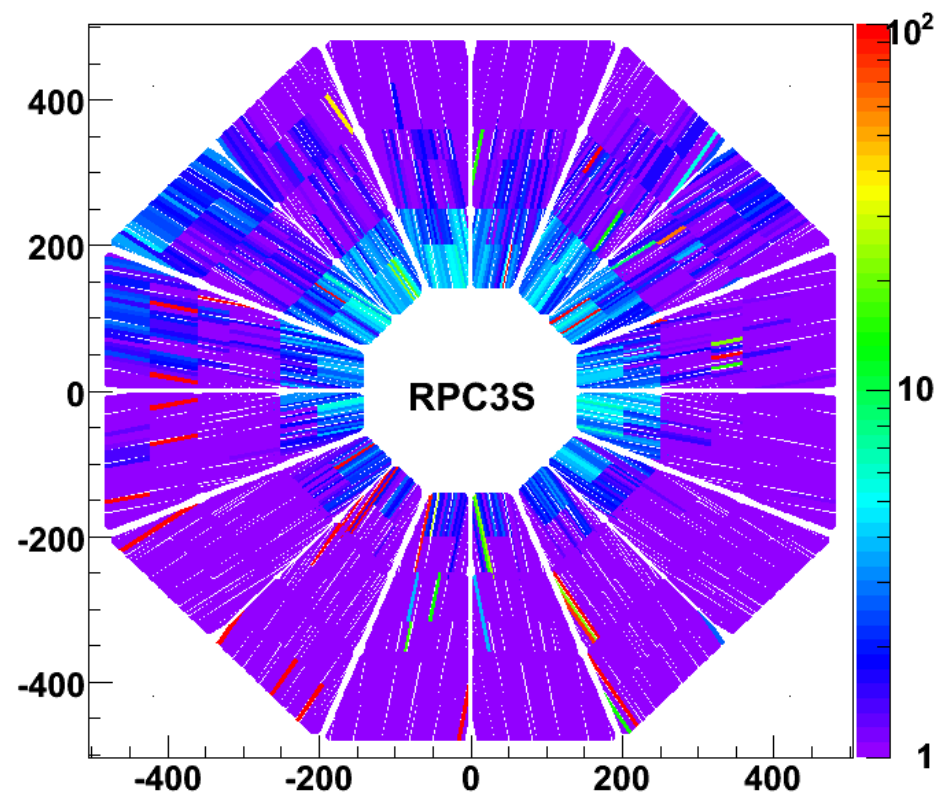
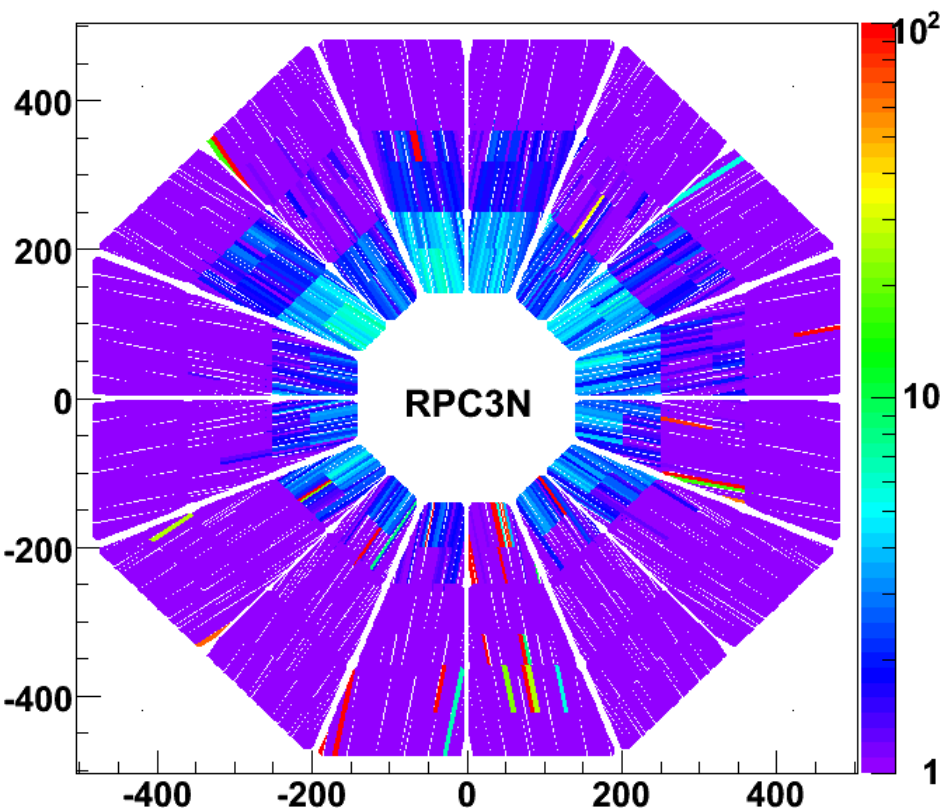
When beam background above $1\text{E}+6$ counts/sec., RPC tripped during ramping up HV.

At beam background $\sim 5\text{E}+5$ counts/sec., RPC drove high current but still be able to operate

Large Dark currents in the same sectors even after being able to switch on

Rates with collision timing

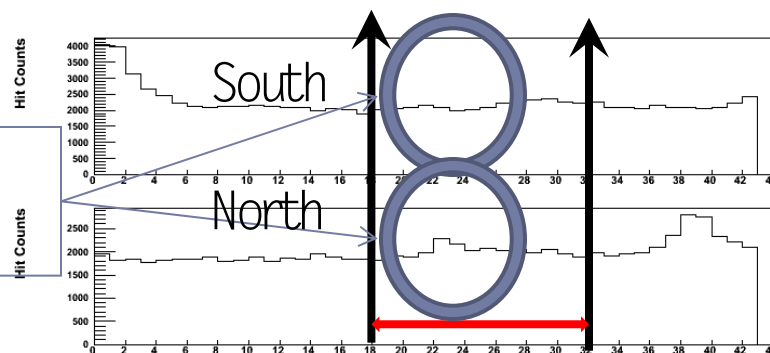
- RHIC store 15172. run 331165. 280k clock trigger events.



Collision timing/
outgoing beams



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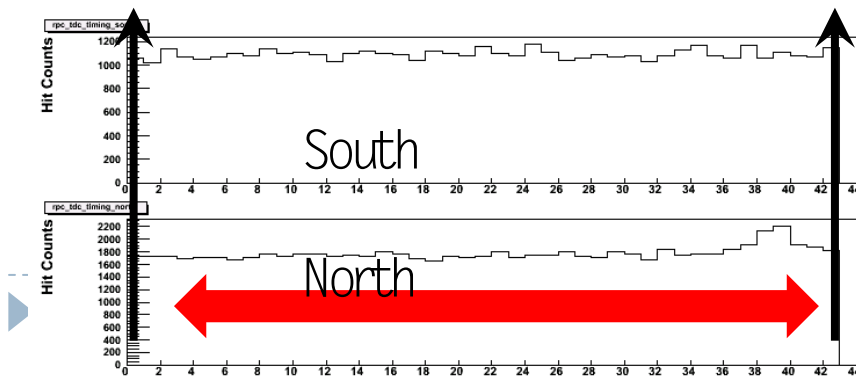
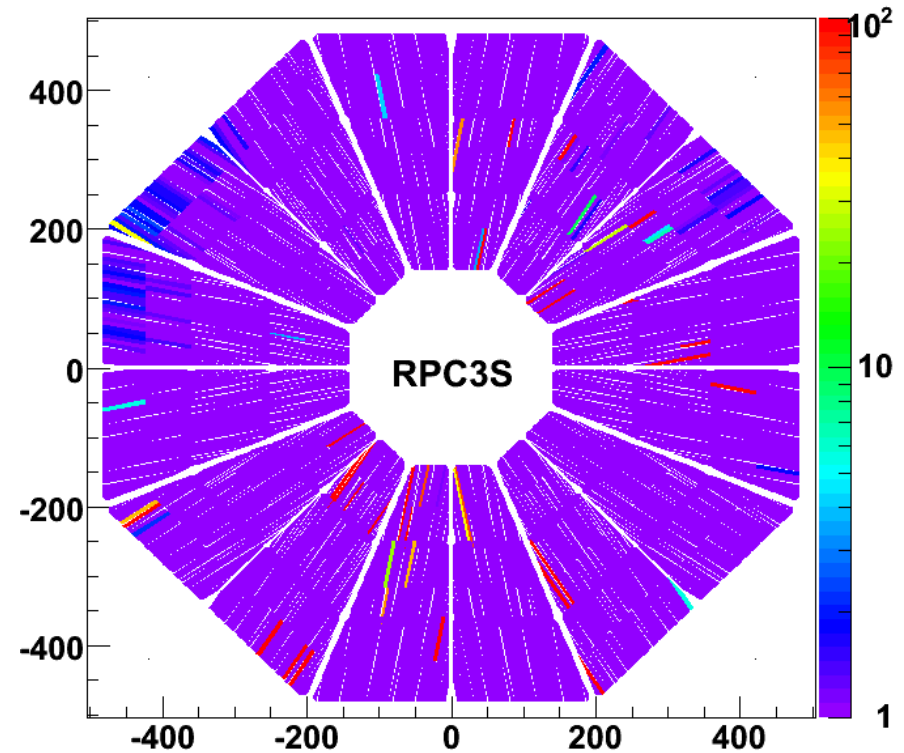
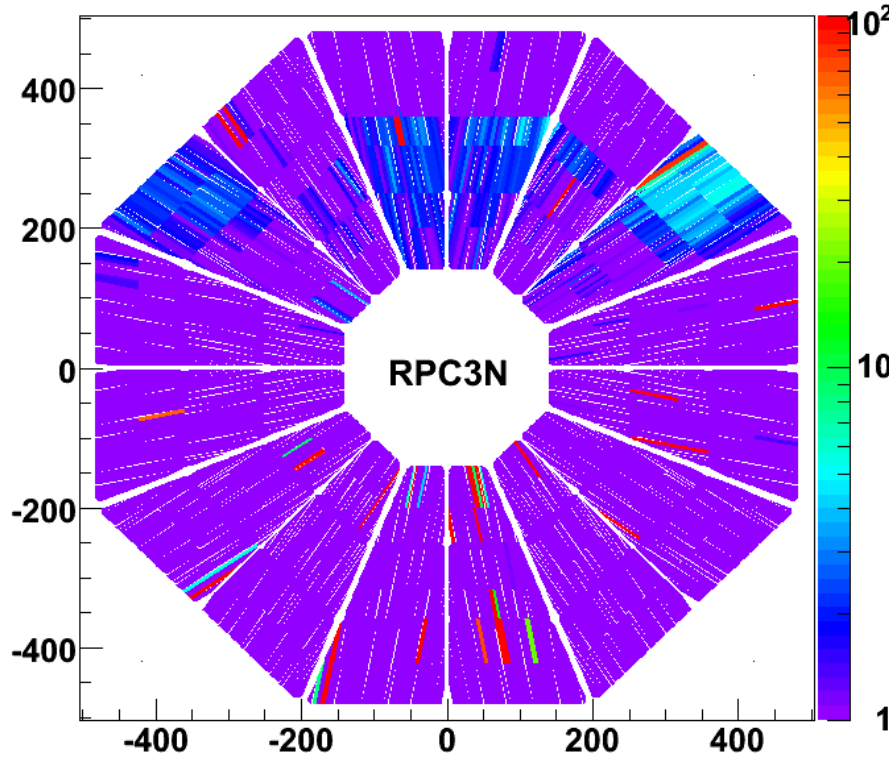


Less background seen
in collision/outgoing
beam

2010/07/16

Single beams in Yellow : incoming background in North

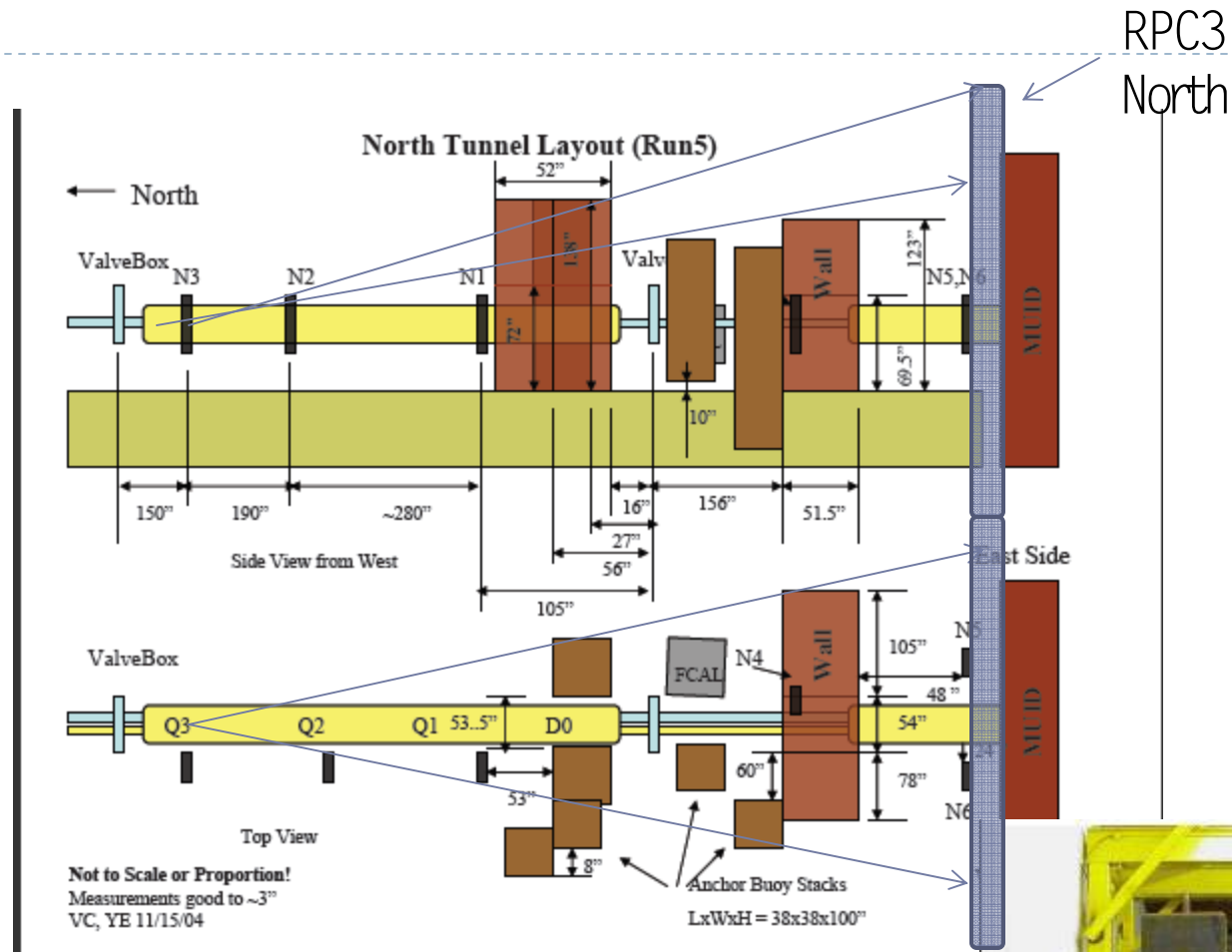
- RHIC store 15171. run 331139.



Similar shape in single beam run, but also indication of higher incoming backgrounds with collisions

2010/07/16

Shielding location

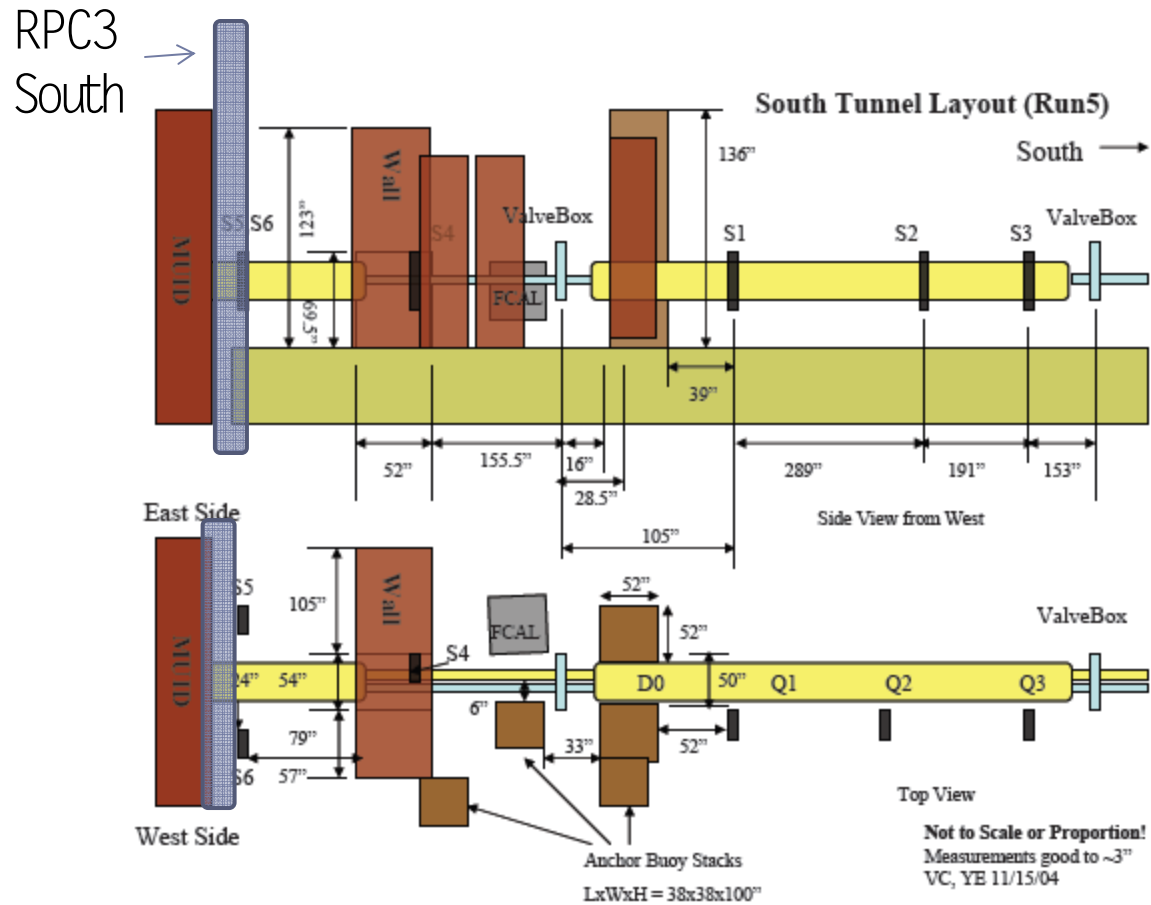


We are considering to request further shielding, possibly close to Q2 - Q1 first left and right of beam pipe



BACKUP

-location of tunnel scalers south



Where To Find PHENIX Engineering Info



That will be me next week

Next Monday Feb. 21 is Presidents Day , a Lab Holiday No work. After that comes the longest stretch of the year between Lab holidays : 14 weeks until next Lab holiday (May 30, Memorial Day)

Links for the weekly planning meeting slides, archives of past meeting slides, long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm